Kansas Department of Health and Environment
Bureau of Waste Management
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Recycling and Disposal of Aerosol Cans

Technical Guidance Document HW 02-02

This guidance document is intended to cover typical aerosol cans used in industrial and commercial applications. This document is not intended to cover the management and disposal options for materials in compressed gas cylinders and tanks. Aerosol cans used in household applications are not regulated by the Kansas hazardous waste regulations. KDHE encourages homeowners and others who have non-empty aerosol cans, such as spray cans of paint, pesticides, cleaners, solvents, etc., to dispose of these materials in an environmentally responsible manner, through their local Household Hazardous Waste facility.

General

Almost all businesses and industries use chemical products purchased in aerosol cans. These products may range from a nonhazardous window cleaner to a highly toxic pesticide. Generally, most empty aerosol cans may be recycled as scrap metal or disposed in the trash. However, problems arise when defective, unused, or unwanted cans of product or expired product need to be discarded by regulated generators. Like all materials that become waste, each generator is responsible for determining if the material is a hazardous waste at the time when the material will be disposed.

Aerosol cans consist of three types of materials: 1) the can, 2) the product, and 3) the propellant. Any or all of these materials may meet the criteria for hazardous waste. Once a decision has been made to discard the aerosol cans, a generator has several management options available depending on whether the can is empty or still contains product or product residues.

Empty or Non-empty Nonhazardous Aerosol Cans

Empty nonhazardous aerosol cans may be recycled as scrap metal, disposed of in the trash, or disposed as a hazardous waste at the generator's discretion.

Aerosol cans still containing both nonhazardous products and nonhazardous propellants may also be disposed in the trash or the contents may be removed from the cans and each component either recycled or disposed as trash. KDHE encourages all generators to recycle materials, if feasible.

Empty Aerosol Cans That Previously Contained Hazardous Products or Propellants

Empty aerosol cans that previously contained any hazardous products and are **recycled as scrap metal** are conditionally exempt from the hazardous waste regulations under 40 CFR 261.6(a)(3)(ii), regardless of the facility's classification. Except for Small Quantity Generators, only "RCRA empty" aerosol cans, as defined in 40 CFR 261.7, may be **disposed** in the trash. Most aerosol cans are considered "RCRA empty" when all the product has been expelled from the can and only residue remains and the pressure in the can is at or very near atmospheric pressure at normal room temperature. To be "RCRA empty," an aerosol can that previously contained an acutely toxic chemical specified on the P-list [refer to 40 CFR 261.33(e)] must be triple-rinsed using an appropriate solvent or decontaminated using an approved equivalent method. Since triple-rinsing is impractical for aerosol cans, disposal as a hazardous waste may be the only feasible option.

Aerosol Cans Still Containing Hazardous Products or Propellants

Intact, discarded aerosol cans are hazardous wastes if the cans still contain: (1) a product or propellant that exhibits one or more of the hazardous waste characteristics of ignitability, corrosivity, reactivity, or toxicity, (2) a U-listed chemical, or (3) a chemical or residue of an acutely toxic chemical specified on the P-list.

Because of the variety of aerosol products and propellants used, intact aerosol cans may be hazardous for one or more of the above reasons.

Are Intact Aerosol Cans Considered a Characteristic Reactive Hazardous Waste?

KDHE cannot specifically determine whether or not any particular aerosol can will be a reactive hazardous waste. Each generator must consider whether or not his aerosol cans may be reactive hazardous wastes by using knowledge of the product or by using analytical testing or both. Generally, KDHE does not believe that most pressurized aerosol cans that are managed under normal conditions will be reactive under 40 CFR 261.23(a)(6).

Emptying Hazardous Aerosol Cans to be Recycled

Except in cases of commercial processing, any **person** may empty full or partially full aerosol cans containing hazardous contents and then **recycle** the components without obtaining a treatment permit from KDHE. However, in order to be exempt, the cans **must** be emptied using processing equipment designed for emptying aerosol cans, the equipment **must** be operated with no releases of products or hazardous propellants to the environment, **and** the cans and products **must** be recycled.

Emptying Hazardous Aerosol Cans for Disposal Only

A **generator** may empty full or partially full aerosol cans containing hazardous contents without obtaining a treatment permit from KDHE when both the cans and their contents are being **disposed** or hazardous products and propellants are being disposed and the empty cans are recycled. Only generators are conditionally exempt from the hazardous waste permitting requirements. However, to be exempt from permitting, the cans **must** be emptied by the generator using processing equipment designed for emptying aerosol cans, the equipment **must** be directly connected to the collection container, and the equipment **must** be operated with no releases of products or hazardous propellants to the environment. A container collecting removed product and/or propellant that is a hazardous waste must be managed as a satellite accumulation container or storage container in accordance with the hazardous waste regulations.

Storing Hazardous Aerosol Cans Prior to Recycling or Disposal

Aerosol cans that meet the definition of a hazardous waste and are accumulated and temporarily stored before being recycled or disposed must be managed as hazardous waste in accordance with the hazardous waste regulations. Damaged or defective aerosol cans that will be returned to a vendor for credit or exchanged are not considered to be waste materials.

EPA Generators who store hazardous waste aerosol cans prior to emptying them for disposal **must** empty them within the 90-day storage limit.

Products Removed from Aerosol Cans

Products that are removed and used for their intended purpose or are used as product substitutes are not solid wastes and consequently are not subject to the hazardous waste regulations.

If the products are to be **disposed**, it is the responsibility of the generator to determine whether or not the contents are hazardous wastes in accordance with K.A.R. 28-31-4(b).

NOTE: If the removed product is a P-listed chemical, then the cans are subject to the hazardous waste regulations when **disposed** unless they have been triple-rinsed or decontaminated using an approved equivalent method. Rinsate from these cans must be managed as a hazardous waste, unless the rinsate is reused as product.

What About the Propellant?

Most aerosol cans are pressurized with either flammable gases such as propane or isobutane, or nonflammable gases such as carbon dioxide. The propellant that is expelled when emptying an aerosol can for disposal is typically vented to a coalescing/activated carbon filter when using commercially available equipment. These filters, when disposed, may be a characteristic or listed hazardous waste. Therefore, a hazardous waste determination of these filters needs to be made by the generator. Such a determination can be complex and most generators avoid the expense of testing by deciding to manage these items as hazardous waste. Propellants may only be released to the atmosphere in accordance with the Kansas Air Quality Act, and generators should contact KDHE's Bureau of Air and Radiation (785-296-1579) for more information. If the propellant is captured in a tank or cylinder as an ignitable compressed gas, the tank or cylinder would be subject to the hazardous waste regulations under 40 CFR 261.21(a)(3), if disposed.

Safety Issues

Emptying pressurized aerosol cans can be a dangerous operation and must be performed in a safe and environmentally protective manner. Generators should make sure that chemicals emptied into the same collection container are compatible with one another. Any gases or liquid materials removed from the cans must be managed according to applicable regulations. Processing equipment designed to remove the contents of aerosol cans is commercially available. Please note that KDHE does not provide any type of certification, approval, or endorsement regarding the design, use, and safety of any equipment.

Additional Information

These are general guidelines only. For information regarding any specific or different management options, you may contact the Bureau of Waste Management at (785)296-1600 or at the address at the top of this document. This document and additional information are also available on BWM's website: www.kdhe.state.ks.us/waste.